(c) at least partially replacing the removed portion of the core with the at least one optical material, wherein said at least one optical material is selected from the group consisting of: an electro-optic polymer, a thermo-optic material, a rare-earth doped material, a material with a high verdet constant, and a material with amplification properties.

A1 Cont.

2. (Original) The method of claim 1, wherein removing the cladding further comprises at least one of etching and side polishing the cladding.

3. (Original) The method of claim 2, wherein removing the core further comprises at least one of etching and excavating the core.

4. (Original) The method of claim 1, wherein removing the core further comprises at least one of etching and excavating the core.

5. (Original) The method of claim 1, wherein the fiber is asymmetric and removing the cladding further comprises at least one of etching and side polishing a face of the asymmetric fiber nearest the core.

6. (Original) The method of claim 5, wherein removing the core further comprises at least one of etching and excavating the core.

7. (Original) The method of claim 5, further comprising:

(a) masking the face of the asymmetric fiber nearest the core so as to leave exposed a longitudinal region centered about and immediately adjacent a projected location of the core onto the face nearest the core; and

(b) etching within the longitudinal region to remove the cladding.

8. (Original) The method of claim 1, wherein the fiber is asymmetric and removing the cladding further comprises etching a full circumference of the fiber.

9. (Original) The method of claim 8, wherein removing the core further comprises at least one of etching and excavating the core.

10. (Original) The method of claim 1, wherein the fiber is generally circular and removing the cladding further comprises at least one of etching and side polishing the fiber to obtain an asymmetrical fiber.

A1 cont.

11. (Original) The method of claim 10, wherein removing the core further comprises at least one of etching and excavating the core.

12. (Original) The method of claim 1, wherein replacing the removed portion of the core further comprises:

(a) depositing the at least one optical material on the fiber so as to replace the removed portion of the core and the removed portion of the cladding; and

(b) removing excess optical material from the at least one optical material replacing the cladding to prevent light within the fiber from escaping from the fiber.

13. (Original) The method of claim 12, wherein removing excess optical material further comprises removing the at least one optical material replacing the cladding to a thickness sufficiently small in optical wavelengths to prevent light of a wavelength corresponding to that of the light within the fiber from propagating in the at least one optical material replacing the cladding.

14. (Original) The method of claim 12, wherein depositing the at least one optical material further comprises masking a portion of the fiber so that the at least one optical material replacing the cladding is confined to a longitudinal region centered about and immediately adjacent the at least one optical material replacing the core.

15. (Original) The method of claim 14, wherein removing excess optical material further comprises removing the at least one optical material replacing the cladding to a thickness sufficiently small in optical wavelengths to prevent light of a wavelength corresponding to that of the light within the fiber from propagating in the at least one optical material replacing the cladding.

16. (Original) The method of claim 1, wherein following replacing the removed portion of the core , the method further comprises covering the at least one optical material with a protective coating.

A1 cont

17. (Original) The method of claim 16, further comprising:

(a) affixing an activation means to the protective coating in an opposed relationship to the replaced portion of the core, the activation means for altering optical properties of the at least one optical material; and

(b) covering the activation means and protective coating with a second protective coating.

18. (Original) The method of claim 17, wherein affixing the activation means further comprises affixing an electrode.

19. (Canceled) The method of claim 17, wherein the at least one optical material is chosen from at least one of an electro-optic polymer, a thermo-optic material, a rare-earth doped material, a material having a high verdet constant and a material having amplification properties.

20. (Canceled) The method of claim 16, wherein the at least one optical material is chosen from at least one of an electro-optic polymer, a thermo-optic material, a rare-earth doped material, a material having a high verdet constant and a material having amplification properties.

21. (Original) The method of claim 16, wherein the at least one optical material is poled following covering the at least one optical material with a protective coating.

22. (Canceled) The method of claim 21, wherein the at least one optical material is chosen from at least one of an electro-optic polymer, a thermo-optic material, a rare-earth doped material, a material having a high verdet constant and a material having amplification properties.

23. (Canceled) The method of claim 1, wherein the at least one optical material is chosen from at least one of an electro-optic polymer, a thermo-optic material, a rare-earth doped material, a material having a high verdet constant and a material having amplification properties.

24. (Original) The method of claim 1, wherein removing at least a portion of the core further comprises forming, in an attitude inclined to a transverse plane of the fiber, a boundary between the core and the at least one optical material replacing the core.

A1 cont.

25. (Currently Amended) A ~~The~~ method ~~of claim 1~~ for incorporating at least one optical material into a core of an optical fiber, comprising:

(a) removing at least a section of a cladding of the fiber to expose the core;

(b) removing at least a portion of the core;

(c) at least partially replacing the removed portion of the core with the at least one optical material, wherein removing the cladding further comprises:

~~(a)~~ removing a first section of the cladding along a first longitudinal length of the optical fiber so as to maintain a layer of cladding adjacent the core, the layer adjacent the core inhibiting evanescent mode interaction; and

~~(b)~~ removing the layer of cladding adjacent the core along a second longitudinal length of the optical fiber, the second length being shorter than and within the first longitudinal length.

26. (Original) The method of claim 25, wherein replacing the removed portion of the core further comprises:

(a) depositing the at least one optical material along the second length of the fiber so as to replace the removed portion of the core and the removed layer of cladding adjacent the core; and

(b) removing excess optical material from the at least one optical material replacing the layer of cladding to prevent light within the fiber from escaping from the fiber.

27. (Original) The method of claim 26, wherein removing excess optical material further comprises removing the at least one optical material replacing the layer of cladding to a thickness sufficiently small in optical wavelengths to prevent light of a wavelength

corresponding to that of the light within the fiber from propagating in the at least one optical material replacing the layer of cladding.

A1 cont.

28. (Currently Amended) The method of claim ~~28~~ 27, wherein following replacing the removed portion of the core , the method further comprises covering the at least one optical material with a protective coating.

29. (Original) The method of claim 28, further comprising:

(a) affixing an activation means to the protective coating in an opposed relationship to the replaced portion of the core, the activation means for altering optical properties of the at least one optical material; and

(b) covering the activation means and protective coating with a second protective coating.

30. (Original) The method of claim 29, wherein the at least one optical material is chosen from at least one of an electro-optic polymer, a thermo-optic material, a rare-earth doped material, a material having a high verdet constant and a material having amplification properties.

31. (Original) The method of claim 29, wherein affixing the activation means further comprises affixing an electrode.

32. (Original) The method of claim 28, wherein the at least one optical material is chosen from at least one of an electro-optic polymer, a thermo-optic material, a rare-earth doped material, a material having a high verdet constant and a material having amplification properties.

33. (Original) The method of claim 28, wherein the at least one optical material is poled following covering the at least one optical material with a protective coating.

34. (Original) The method of claim 33, wherein the at least one optical material is chosen from at least one of an electro-optic polymer, a thermo-optic material, a rare-earth doped material, a material having a high verdet constant and a material having amplification properties.

35. (Original) The method of claim 25, wherein removing at least a portion of the core further comprises forming, in an attitude inclined to a transverse plane of the fiber, a boundary between the core and the at least one optical material replacing the core.

A1 cont.

36. (Original) The method of claim 25, further comprising:

(a) masking the fiber so as to leave exposed a first region centered about and immediately adjacent a projected location of the core on an outer surface of the fiber, a length of the exposed region corresponding to the first length;

(b) etching within the first region to remove the first section of cladding;

(c) masking the layer of cladding so as to leave exposed a length of the layer of cladding corresponding to the second length; and

(d) etching within the exposed layer of cladding to remove the layer of cladding.

37. (Original) A method of incorporating an optical device into an asymmetric optical fiber, comprising:

(a) etching the cladding on a face of the optical fiber nearest a core of the fiber along a first length of the fiber to a depth so as to maintain a layer of cladding above the core, a thickness of the layer of cladding being a minimum to inhibit evanescent mode interaction;

(b) etching the layer of cladding and a portion of the core of the optical fiber along a second length shorter than the first length and located generally in a central region of the first length;

(c) adding at least one optical material to replace the etched portion of the core and at least a partial depth of the etched layer of cladding; and

(d) covering the at least one optical material with a protective coating.

38. (Original) The method of claim 37, further comprising affixing an activation means to the protective coating in a location above the at least one optical material in the etched core, the activation means for altering optical properties of the at least one optical material.

A1 cont.

39. (Original) The method of claim 38, wherein affixing the activation means further comprises affixing an electrode.

40. (Original) The method of claim 38, further comprising providing a second protective coating over the activation means.

41. (Original) The method of claim 37, wherein adding the at least one optical material further comprises:

(a) adding the at least one optical material to replace a full depth of the layer of cladding; and

(b) removing an excess depth of the at least one optical material replacing the layer of cladding so as to maintain the partial depth of the at least one optical material replacing the layer of cladding at a thickness sufficiently small in optical wavelengths to prevent light of a wavelength corresponding to that of the light within the fiber from propagating in the at least one optical material replacing the layer of cladding.

42. (Original) The method of claim 37, further comprising poling the at least one optical material after the at least one optical material is covered with a protective coating.

43. (Currently Amended) A device for use in fiber optic applications, comprising:

(a) an asymmetric optical fiber having a portion of cladding removed to expose a section of a core of the fiber and further having at least a portion of the exposed core removed; and

(b) at least one optical material disposed so as to replace the removed portion of the core, wherein said at least one optical material is selected from the group consisting of: an electro-optic polymer, a thermo-optic material, a rare-earth doped material, a material with a high verdet constant, and a material with amplification properties.

44. (Original) The device of claim 43, further comprising an activation means for altering optical properties of the at least one optical material so as to affect light propagating through the core of the asymmetric fiber.

A1 concl'd

45. (Original) The device of claim 44, wherein the activation means further comprises an electrode.

46. (Currently Amended) The device of claim 44, wherein the at least one optical material ~~is~~ comprises an electro-optic polymer and the device is a phase modulator.

47. (Original) The device of claim 44, wherein the asymmetric fiber is joined with a second asymmetric fiber having a second core of optical material, and the device is a switchable directional coupler.

48. (Original) The device of claim 44, further comprising a first protective layer disposed between the activation means and the at least one optical material.

49. (Original) The device of claim 48, wherein the activation means further comprises an electrode.

50. (Original) The device of claim 49, further comprising a second protective layer disposed over the electrode.

51. (Original) The device of claim 43, wherein the at least one optical material is a rare-earth doped material and the device is one of an optical amplifier and a source.

52. (Original) The device of claim 43, wherein a diffraction grating is superimposed in the at least one optical material and the device is a tunable filter.

53. (Original) The device of claim 43, wherein the at least one optical material has a high verdet constant and the device is an in-fiber isolator.